



PATENT ABSTRACTS OF JAPAN

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YAMAMOTO YUJI****(54) NONAQUEOUS SECONDARY BATTERY****(57) Abstract:**

PURPOSE: To improve the cycle characteristics of a nonaqueous secondary battery having a negative electrode active material of lithium or alloy thereof by using reformed manganese oxide as a positive active material.

CONSTITUTION: A battery is constituted with a negative electrode having an active material of lithium or alloy thereof, and an electrode having an active material of compound oxide expressed by $\text{Li}_x\text{Al}_y\text{MnO}_2$. In this

case, an oxide obtained from mixing and heat treating a manganese compound, a lithium compound, an aluminum compound is used as a manganese oxide containing the compound oxide expressed as $\text{Li}_x\text{Al}_y\text{MnO}_2$. As a result, the crystal structure of the compound oxide is substantially distorted and, therefore, a lithium ion dispersion in a solid phase becomes easy. Also, aluminum is eluded into an electrolyte and deposited on the negative electrode, thereby generating Li-Al alloy and ensuring freedom from cycle deterioration.

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